

FINAL REPORT – November 14, 1997
ADWR Conservation Assistance Program

Grant Project #CA96TUM51-00

Title & Description: Ultra Low Flush (ULF) Toilet/Faucet Aerator Rebate Program for Metropolitan Domestic Water Improvement District (MDWID)

ADWR provided Metropolitan Domestic Water Improvement District (MDWID) with a \$15,000 grant for its toilet rebate program and faucet aerator retrofit program. The following is a report regarding each program and the estimated water savings.

Toilet Rebate Program

In February 1995, the Board of Directors of MDWID established a toilet rebate program to encourage customers to retrofit their high volume toilets with ultra-low-flow toilets. The program provides \$50 for the installation of an ultra-low-flow toilet within MDWID to replace an existing high flow toilet. MDWID gives a rebate of \$40 for additional toilets retrofitted by the same customer. The lower cost for additional toilets was done based on studies showing that additional toilets did not provide the same cost benefit/water savings as the first one installed. A customer submits a completed application along with the original receipt for the ultra-low-flow toilet purchased. Staff reviews the application and confirms if the customer has complied with the program's requirements. If the application is approved, MDWID issues a rebate check. Obviously, new construction is exempt and the program is not retroactive.

As an important part of MDWID's conservation efforts, the toilet rebate program has been promoted regularly through its newsletters, billing inserts, and on-hold phone messages. Residents have responded positively to the program.

In August 1995, ADWR awarded to MDWID a \$10,000 conservation assistance grant for the toilet rebate program. Under the grant, ADWR will pay for half the MDWID's rebate for the first toilet installed per household or apartment units. MDWID utilized in full the grant funds.

The present conservation assistance grant began in November 1996. Since the toilet rebate program's inception, 1,027 ultra low flush toilets have been installed, replacing high flow toilets in MDWID. MDWID's toilet rebate program has issued \$45,253 with \$13,350 of that amount paid through the two ADWR's conservation assistance grants.

In order to estimate water savings, MDWID looked at the 195 customers who participated in first year of the toilet rebate program (February 1995 – January 1996). Among those 195 customers, 292 ultra low flush toilets were installed. MDWID was able to track the water usage for the 195 customers for the year prior to participation in the program (February 1994 – January 1995), for the year that the ULF toilets were installed (February 1995 – January 1996), and for one complete

year after the ULF toilets were installed (February 1996 – January 1997). The table on the next page shows the water savings calculated from those 195 residents participating in the toilet rebate program. While other factors may impact a reduction in water consumption, it is clear to see that water consumption reduced among those 195 customers. Based on the water consumption prior to installation of the ULF toilets and the water consumption of the ULF toilets being installed for one full year, 2,553,210 gallons of water was saved. Of the 195 residents, an average of 36 gallons were saved daily. Another way of considering the water savings is that of the 292 ULF toilets installed, each toilet saves an average of 24 gallons daily. This means of the 1,027 ULF toilets installed since the toilet rebate program's inception, 8,996,520 gallons of water may be saved annually.

Metro Water District Toilet Rebate Program

Water Consumption for 195 Participating Households for Three Years

	2/94 – 1/95 Before Rebate	2/95 – 1/96 After Rebate*	2/96 – 1/97 After Rebate	Water Saved 1 st Year*	Water Saved 2 nd Year*	Water Saved From Before & After Rebate
Total Annual Consumption	33,517,800 gallons	31,881,660 gallons	30,984,590 gallons	1,636,140 gallons	897,070 gallons	2,533,210 gallons
Total Monthly Average	2,793,150 gallons	2,656,805 gallons	2,582,049 gallons	136,345 gallons	74,756 gallons	211,101 gallons
Average Monthly Usage per Household	14,324 gallons	13,625 gallons	13,241 gallons	699 gallons	384 gallons	1,083 gallons
Average Daily Usage per Household	477 gallons	454 gallons	441 gallons	23 gallons	13 gallons	36 gallons

* The 195 household did not have all ultra-low-flush toilets installed for the full year between 2/95 – 1/96

MDWID also conducted a random phone survey of those 195 original customers to determine their satisfaction with the toilet rebate program. Eight-five percent of the customers contacted were very positive about the ULF toilets. Those negative responses dealt with that the toilets were discoloring, hard to clean and/or had to be flushed more than once. The overall majority were pleased with the toilet rebate program and would recommend the program to others. Most of the toilets were purchased at Payless Cashways, Home Depot, Cummings Plumbing, Naughton Plumbing. The brands of ULF toilets purchased were primarily Briggs, Koehler,

and American Standard.

Aerator Retrofit Kits

MDWID decided to pursue an aerator retrofit kit program based on savings projected from MDWID's participation in the Southern Arizona Seniors Program. The program was designed to offer MDWID customers a free aerator retrofit kit. Customers were informed through a billing insert that the free aerator retrofit kit was available. Those interested completed the form and returned it to the MDWID office. MDWID then generated mailing labels that were sent to the manufacturer, AM Conservation Group. The manufacturer then mailed the aerator kits directly to the customer. Each kit included a kitchen faucet aerator (2.2 gallons per minute), two bathroom faucet aerators (1.5 gallons per minute) and installation instructions.

MDWID offered the aerator retrofit kits first in January 1997. Another billing insert was sent in August 1997 as a second offer to customers. To date, 5,595 aerator retrofit kits have been distributed, which equates to forty percent of MDWID's customers. The program has cost \$22,274, with approximately \$11,137 paid from the ADWR conservation grant.

Although it is premature to track water usage by participating customers, MDWID has calculated what the projected water savings may be from the aerator retrofit kits. The following calculations were used and they are conservative estimates: At least a 2.3 gallons reduction occurs from the aerator kits (the kitchen faucet's gallons per minute (gpm) changed from 3 gpm to 2.2 gpm with a savings of 0.8 gpm; the bathroom faucet's gpm changed from 3 gpm to 1.5 gpm; and only one bathroom faucet's water usage was used to calculate water savings). A faucet is in use 4 minutes a day by an individual and 2 individuals per housing unit. Based on those assumptions, an estimated 6,716 gallons were saved by an aerator kit. An estimated 37,576,020 gallons of water may be saved annually from the installation of the 5,595 aerator kits.

Summary

Based on the public participation and response, MDWID is pleased with both the toilet rebate program and the aerator retrofit program. Both programs have been a positive means for reaching out to its customers and helping to promote water conservation. The aerator retrofit kit program appears to save more water than the toilet rebate program and is economically more feasible for many water providers. Potentially, from these two programs, MDWID customers may be saving approximately 46,572,000 gallons or 142 acre feet of water annually. MDWID is also appreciative of the conservation assistance grants that it received from ADWR

in order for these two programs to be successful.